

Kramer Electronics, Ltd.



USER MANUAL

Model:

WP-210E

XGA Line Driver

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ADDENDUM: WP-210, WP-210E, WP-210A, WP-210AE, WP-210AL, WP-220, WP-220E, and WP-230.

This addendum clarifies the correct color of the V sync and H sync coax cables.

The color of the coax cables with all Kramer Wall Plates, including the **WP-210, WP-210E, WP-210A, WP-210AE, WP-210AL, WP-220, WP-220E, WP-230** will be as follows:

- For V sync (vertical sync) – black¹
- For H sync (horizontal sync) – yellow²

¹ No longer yellow

² No longer white

1 Introduction

Welcome to Kramer Electronics (since 1981): a world of unique, creative and affordable solutions to the infinite range of problems that confront the video, audio and presentation professional on a daily basis. In recent years, we have redesigned and upgraded most of our line, making the best even better! Our 350-plus different models now appear in 8 Groups¹, which are clearly defined by function.

Congratulations on purchasing your **WP-210E XGA Line Driver** active wall plate², which is ideal for graphics installations in board, conference and training rooms, as well as long distance signal distribution. The package includes the following items:

- **WP-210E XGA Line Driver**
- This user manual³

2 Getting Started

We recommend that you:

- Unpack the equipment carefully and save the original box and packaging materials for possible future shipment
- Review the contents of this user manual
- Use Kramer high performance high resolution cables⁴

3 Overview

The Kramer **WP-210E XGA Line Driver** includes:

- An XGA input (up to UXGA resolution) on a standard HD-15 connector
- A local monitor XGA loop-through on an HD15F connector
- An amplified and equalized RGBHV output on 5 BNC connectors

1 GROUP 1: Distribution Amplifiers; GROUP 2: Video and Audio Switchers, Matrix Switchers and Controllers; GROUP 3: Video, Audio, VGA/XGA Processors; GROUP 4: Interfaces and Sync Processors; GROUP 5: Twisted Pair Interfaces; GROUP 6: Accessories and Rack Adapters; GROUP 7: Scan Converters and Scalers; and GROUP 8: Cables and Connectors

2 Each wall plate is supplied with the required M3x4 screws

3 Download up-to-date Kramer user manuals from the Internet at this URL: <http://www.kramerelectronics.com/manuals.html>

4 The complete list of Kramer cables is on our Web site at <http://www.kramerelectronics.com> (click "Cables and Connectors" in the Products section)

In particular, the **WP-210E XGA Line Driver** has:

- Level¹ control
- Cable equalization control
- Switches for ID BIT control and loop termination
- Switches to select between analog / digital sync operation
- Video bandwidth of 420 MHz, that ensures transparent operation for all resolutions
- A standard 12 Volt DC feed

Achieving the best performance means:

- Connecting only good quality connection cables, thus avoiding interference, deterioration in signal quality due to poor matching, and elevated noise levels (often associated with low quality cables)
- Avoiding interference from neighboring electrical appliances and positioning your **WP-210E** away from moisture, excessive sunlight and dust

4 Your WP-210E XGA Line Driver

This section defines the **WP-210E XGA Line Driver**:

- Available in 3 versions (see section 4.1)
- Front panel (see section 4.2)
- Lower side panel (see section 4.3)
- RGBHV Outputs (see section 4.4)

¹ VGA/UXGA output signal

4.1 Your WP-210E: Available in 3 Versions

The Kramer **WP-210E XGA Line Driver** is available in 3 versions—one for Belgium, one for Germany, and one for the England (and the rest of Europe)—as Figure 1 illustrates:

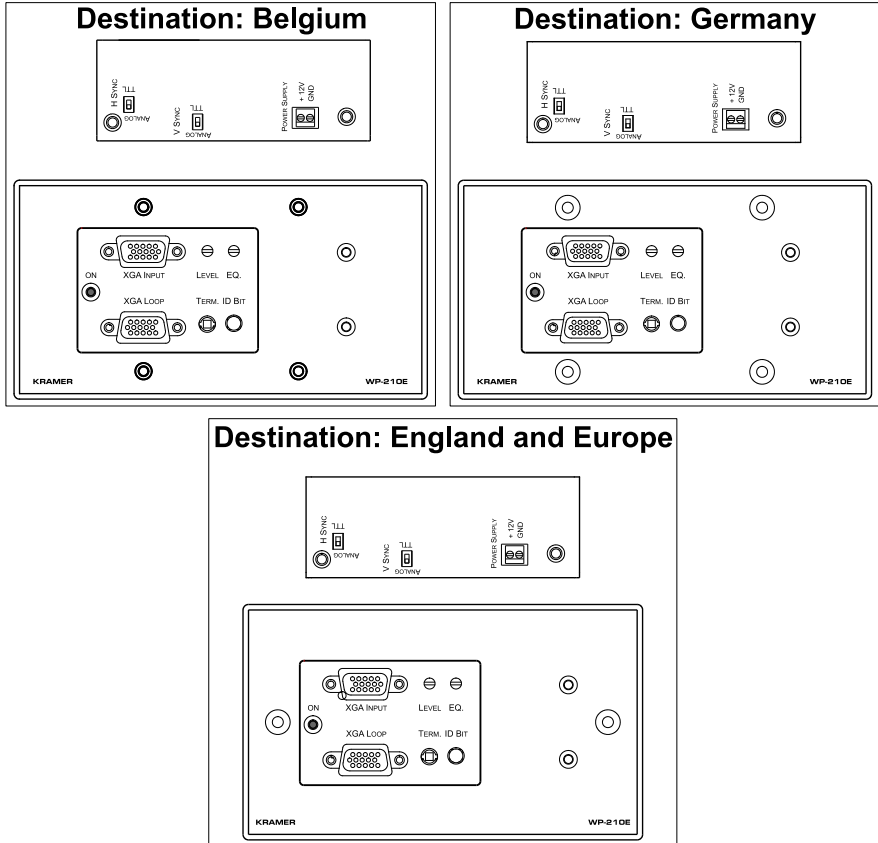


Figure 1: Your WP-210E: Available in 3 Versions

4.2 Your WP-210E Front Panel

Figure 2 and Table 1 define the front panel of the **WP-210E**:

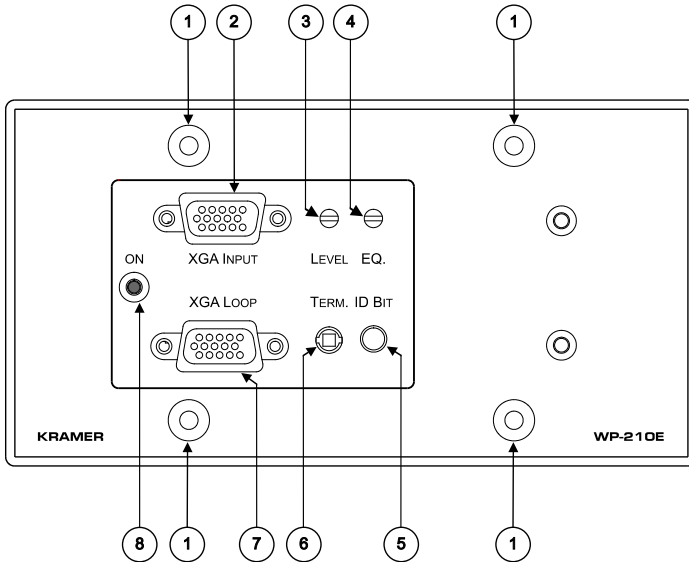


Figure 2: WP-210E Front Panel

Table 1: WP-210E Front Panel Features

#	Feature	Function
1	Holes (2)	For fastening the wall plate in place
2	XGA INPUT HD15F Connector	Connect to the VGA/XGA source
3	LEVEL Potentiometer	Adjusts ² the output signal level for the RGBHV outputs
4	EQ. ¹ Potentiometer	Adjusts ² the cable compensation equalization level for the RGBHV outputs
5	ID BIT Button	Selects ID BIT when pushed in (when outputting a VGA signal from a notebook to an external VGA monitor ³)
6	TERM. Button	Push in to terminate with 75Ω, or release for looping
7	XGA LOOP HD15F Connector	For VGA/XGA looping to increase output availability
8	ON LED	Illuminates when receiving power

¹ Degradation and VGA/XGA signal loss can result from using long cables (due to stray capacitance), sometimes leading to a total loss of sharpness in high-resolution signals

² Use a screwdriver to carefully rotate the Potentiometer, adjusting the appropriate level

³ When the ID BIT is ON, the notebook will output to an external VGA monitor

4.3 Your WP-210E Lower Side Panel

Figure 3 and Table 2 define the lower side panel of the **WP-210E**:

Table 2: WP-210E Lower Side Panel

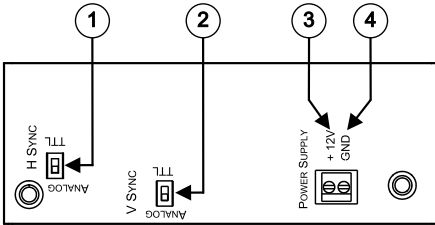


Figure 3: WP-210E Lower Side Panel

#	Feature	Function
1	H (Horizontal) Sync Switch	Set both switches to TTL for a digital sync source (for example, a graphics card from a PC or laptop). Set both switches to Analog if the source is analog based, for example, an RGBHV source with coaxial cable for sync, such as a camera with analog H and V syncs
2	V (Vertical) Sync Switch	
3	+12V PIN	Connect (+) to the connector for powering the unit
4	GND PIN	Connect (-) to the Ground

4.4 Your RGBHV Outputs

Figure 4 defines the 5 RGBHV BNC output connectors¹ of the **WP-210E** which connect to the pre-installed wiring in the wall box opening that connects to the XGA acceptor:

Each BNC connector is color-coded:

Red (R)
Green (G)
Blue (B)
Yellow (Vertical Sync)
White (Horizontal Sync)

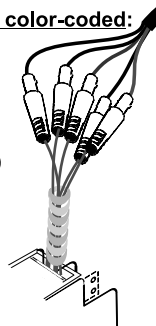


Figure 4: WP-210E RGBHV Outputs

¹ The WP-210E could be used for component HDTV by connecting YPbPr in place of GBR, and not connecting H and V

5 Using the WP-210E XGA Line Driver

You can use your **WP-210E XGA Line Driver**, for example, in a conference room, as the example in Figure 5 illustrates:

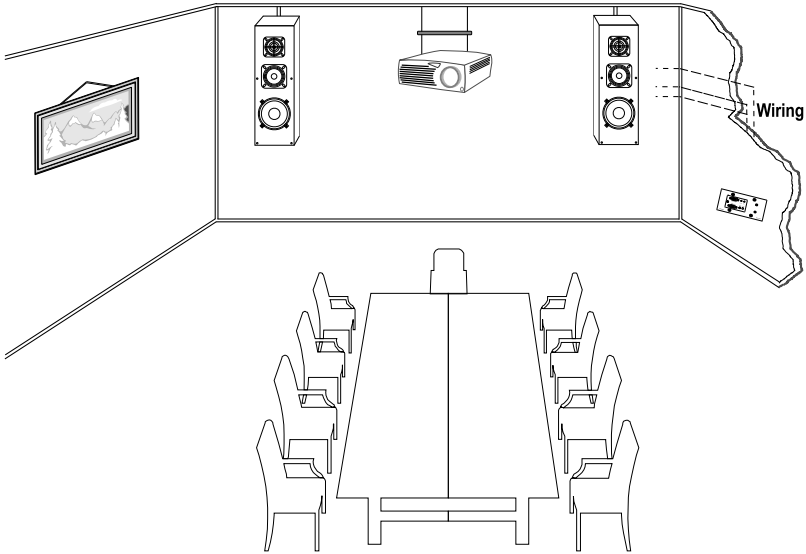


Figure 5: Example of Conference Room WP-210E Installation

For details of how to:

- Install your **WP-210E XGA Line Driver**, see section 5.1
- Operate your **WP-210E XGA Line Driver**, see section 5.2

5.1 Installing the WP-210E XGA Line Driver

To install your **WP-210E XGA Line Driver**:

1. Connect the 5 BNC output connectors to the pre-installed wiring in the wall box opening that connects to the XGA acceptor (for example, a projector).
2. Set both the Hs and Vs switches.
3. Connect your 12V DC power supply to the *POWER SUPPLY* pins¹, taking care that **polarity is correct**.
4. Insert the **WP-210E** directly into the wall box opening, and then mount the front panel securely using the screws.

¹ Connect the wire labeled “+” to the +12V pin, and the wire labeled “-” to the GND pin

5.2 Operating the WP-210E XGA Line Driver

To operate your **WP-210E XGA Line Driver**:

1. Connect your XGA source (for example, a laptop's graphics card) to the XGA Input HD15F connector.
2. Connect the HD15F Loop connector to a local monitor, if required¹.
3. Push in the ID Bit button to set to ON.
4. Adjust² the output signal level and/or cable compensation equalization level, if required.

¹ Push in the TERM switch if the loop output is used, otherwise make sure that the TERM switch is released

² Use a screwdriver to carefully rotate the Potentiometer, adjusting the appropriate level

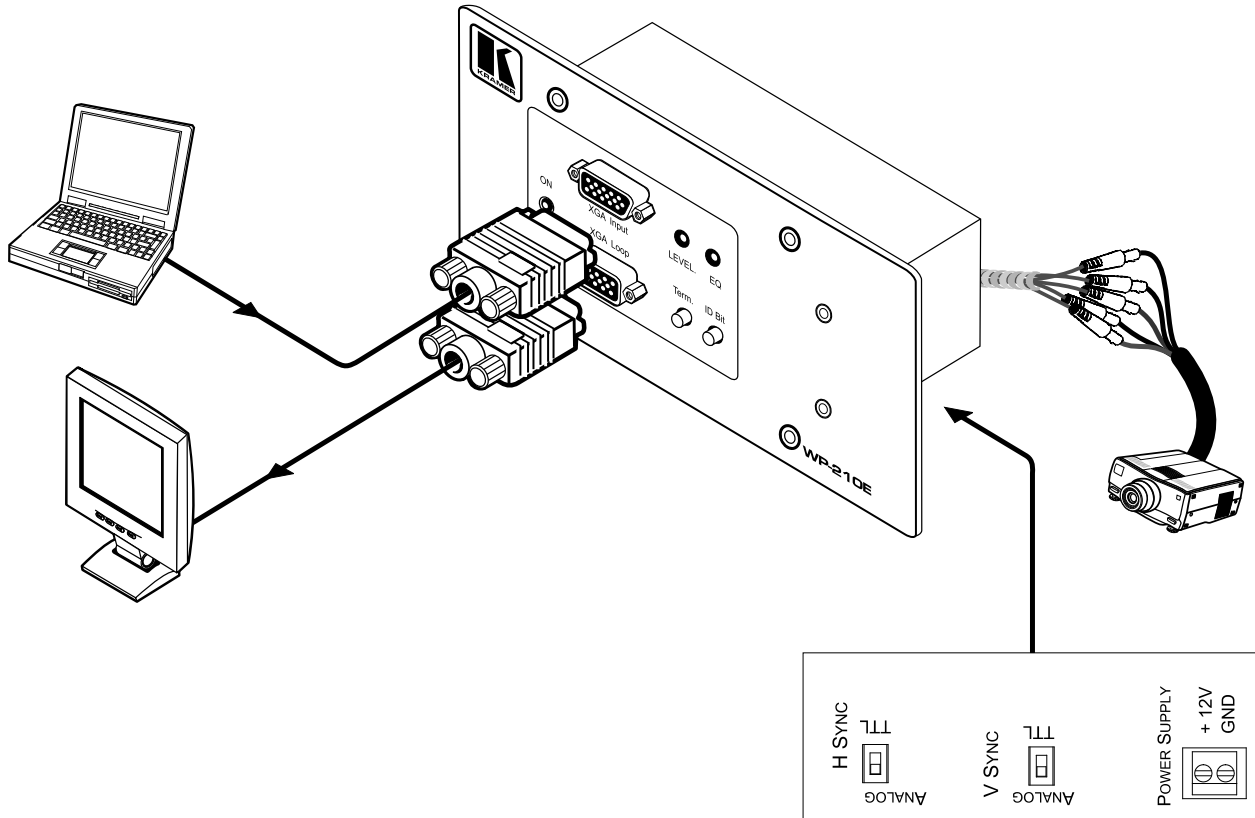


Figure 6: Connecting the WP-210E

6 Technical Specifications

Table 3 includes the technical specifications:

Table 3: Technical Specifications¹ of the WP-210E XGA Line Driver

INPUTS:	Looping analog red, green, blue signals: 0.7 Vpp/75 Ω , H and V sync, TTL level, on HD15F connectors
OUTPUTS:	1 RGBHV on 5 BNC connectors
MAX. OUTPUT LEVEL:	2.2Vpp (XGA)
BANDWIDTH (-3dB):	420MHz, Fully Loaded
DIFF. GAIN:	0.01%
DIFF. PHASE:	0.01 Deg.
K-FACTOR:	<0.05%
S/N RATIO:	73dB
CONTROLS:	Cable EQ. control: 0dB to +6.1dB @ 50 MHz; Level control: -0.8dB to +6.2dB ID BIT button; TERM button; Hs (Horizontal) and Vs (Vertical) Sync switches for TTL/Analog mode
COUPLING:	AC
POWER SOURCE:	12 VDC, 77mA
DIMENSIONS:	Belgium: 8.0cm x 15.1cm x 4.5cm (3.15" x 5.95" x 1.77"), W, H, D Germany: 8.0cm x 15.1cm x 4.5cm (3.15" x 5.95" x 1.77"), W, H, D England and Europe: 8.6cm x 14.6cm x 4.5cm (3.39" x 5.75" x 1.77"), W, H, D
WEIGHT:	0.3 kg (0.67 lbs.) approx
ACCESSORIES:	Power supply

¹ Specifications are subject to change without notice

LIMITED WARRANTY

Kramer Electronics (hereafter *Kramer*) warrants this product free from defects in material and workmanship under the following terms.

HOW LONG IS THE WARRANTY

Labor and parts are warranted for three years from the date of the first customer purchase.

WHO IS PROTECTED?

Only the first purchase customer may enforce this warranty.

WHAT IS COVERED AND WHAT IS NOT COVERED

Except as below, this warranty covers all defects in material or workmanship in this product. The following are not covered by the warranty:

1. Any product which is not distributed by Kramer, or which is not purchased from an authorized Kramer dealer. If you are uncertain as to whether a dealer is authorized, please contact Kramer at one of the agents listed in the web site www.kramerelectronics.com.
2. Any product, on which the serial number has been defaced, modified or removed.
3. Damage, deterioration or malfunction resulting from:
 - i) Accident, misuse, abuse, neglect, fire, water, lightning or other acts of nature
 - ii) Product modification, or failure to follow instructions supplied with the product
 - iii) Repair or attempted repair by anyone not authorized by Kramer
 - iv) Any shipment of the product (claims must be presented to the carrier)
 - v) Removal or installation of the product
 - vi) Any other cause, which does not relate to a product defect
 - vii) Cartons, equipment enclosures, cables or accessories used in conjunction with the product

WHAT WE WILL PAY FOR AND WHAT WE WILL NOT PAY FOR

We will pay labor and material expenses for covered items. We will not pay for the following:

1. Removal or installations charges.
2. Costs of initial technical adjustments (set-up), including adjustment of user controls or programming. These costs are the responsibility of the Kramer dealer from whom the product was purchased.
3. Shipping charges.

HOW YOU CAN GET WARRANTY SERVICE

1. To obtain service on you product, you must take or ship it prepaid to any authorized Kramer service center.
2. Whenever warranty service is required, the original dated invoice (or a copy) must be presented as proof of warranty coverage, and should be included in any shipment of the product. Please also include in any mailing a contact name, company, address, and a description of the problem(s).
3. For the name of the nearest Kramer authorized service center, consult your authorized dealer.

LIMITATION OF IMPLIED WARRANTIES

All implied warranties, including warranties of merchantability and fitness for a particular purpose, are limited in duration to the length of this warranty.

EXCLUSION OF DAMAGES

The liability of Kramer for any effective products is limited to the repair or replacement of the product at our option. Kramer shall not be liable for:

1. Damage to other property caused by defects in this product, damages based upon inconvenience, loss of use of the product, loss of time, commercial loss; or:
2. Any other damages, whether incidental, consequential or otherwise. Some countries may not allow limitations on how long an implied warranty lasts and/or do not allow the exclusion or limitation of incidental or consequential damages, so the above limitations and exclusions may not apply to you.

This warranty gives you specific legal rights, and you may also have other rights, which vary from place to place.

NOTE: All products returned to Kramer for service must have prior approval. This may be obtained from your dealer. This equipment has been tested to determine compliance with the requirements of:

EN-50081:	"Electromagnetic compatibility (EMC); generic emission standard. Part 1: Residential, commercial and light industry"
EN-50082:	"Electromagnetic compatibility (EMC) generic immunity standard. Part 1: Residential, commercial and light industry environment".
CFR-47:	FCC Rules and Regulations: Part 15: "Radio frequency devices Subpart B – Unintentional radiators"

CAUTION!

- ☒ Servicing the machines can only be done by an authorized Kramer technician. Any user who makes changes or modifications to the unit without the expressed approval of the manufacturer will void user authority to operate the equipment.
- ☒ Use the supplied DC power supply to feed power to the machine.
- ☒ Please use recommended interconnection cables to connect the machine to other components.



For the latest information on our products and a list of Kramer distributors, visit our Web site: www.kramerelectronics.com.

**Updates to this user manual may be found at
<http://www.kramerelectronics.com/manuals.html>.**

We welcome your questions, comments and feedback.



Kramer Electronics, Ltd.

Web site: www.kramerelectronics.com

E-mail: info@kramerel.com

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